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26janeiro19
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Sociedade Portuguesa
de Gastrenterologia

Carcinoma hepatocelular
Terapêuticas loco-regionais

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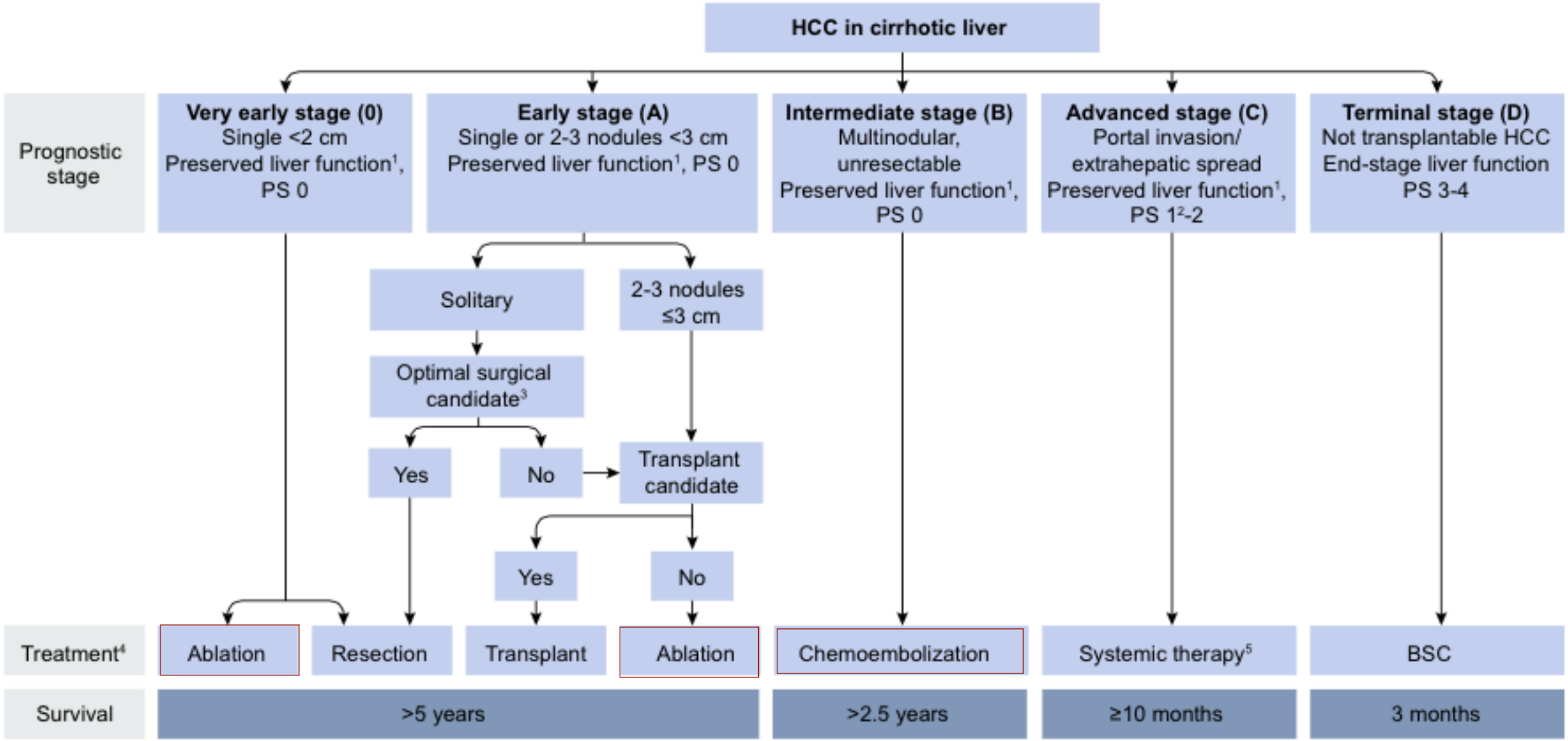
EASL JOURNAL OF HEPATOLOGY
2018 vol. 69

EASL Clinical Practice Guidelines: Management of hepatocellular carcinoma☆



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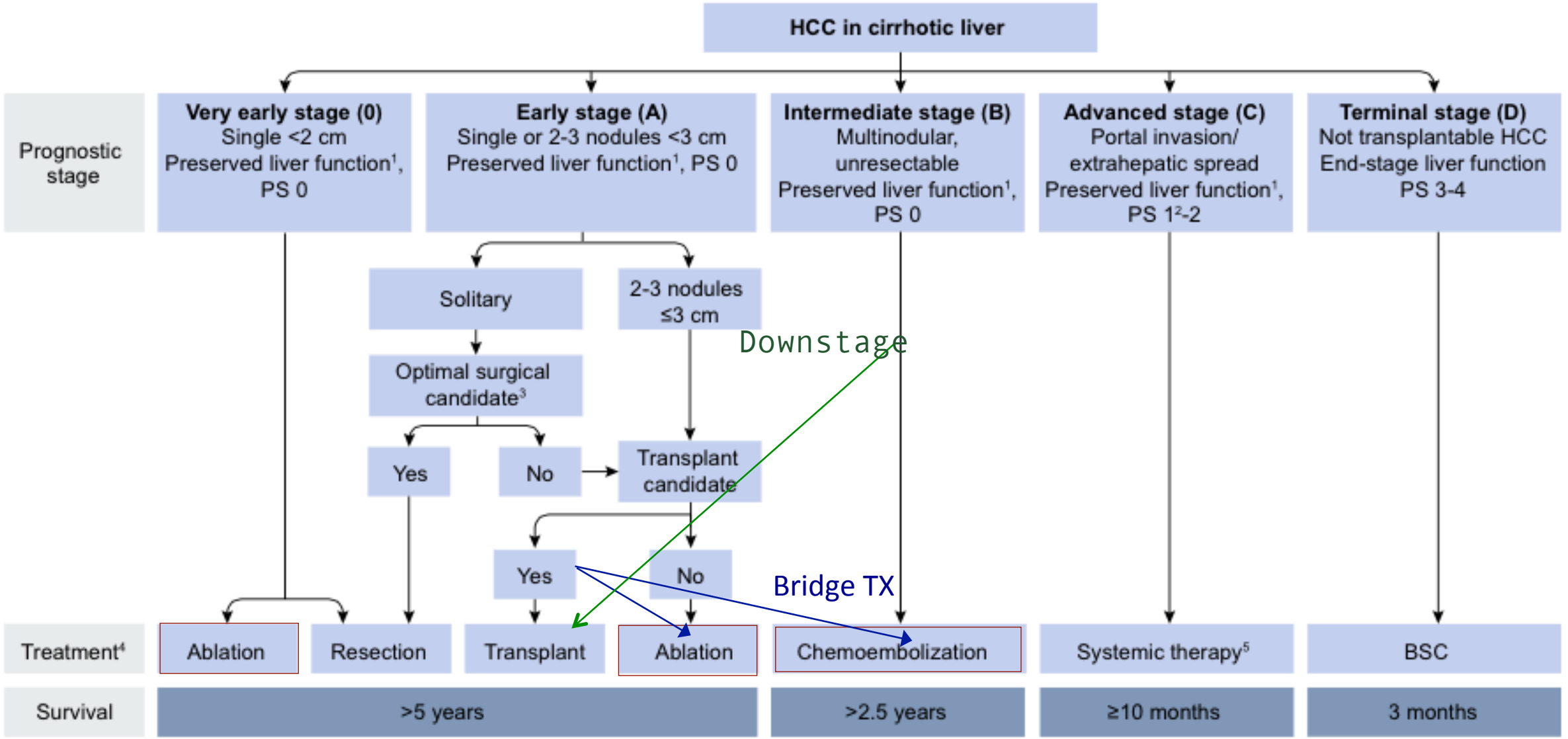
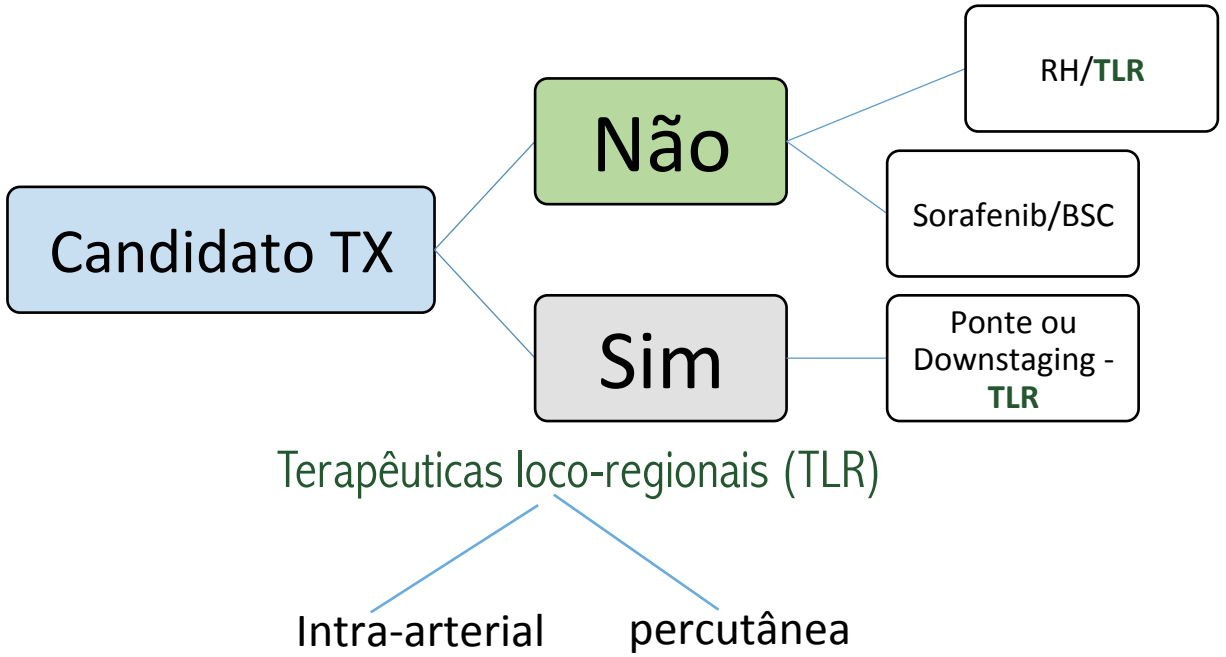


RMD

- Age
- Child-Pugh
- α-fetoprotein (prognosis and follow-up)
- Perfomance status
- Comorbilities
- Tumor – size and location
- Tumor – number
- Tumor - Vascular invasion
- Ascites
- Extra-hepatic disease

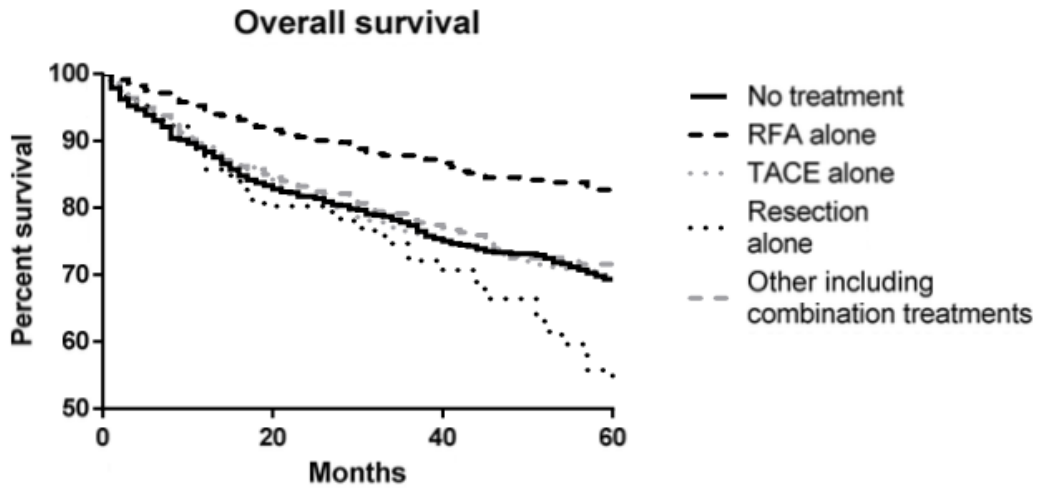


Transpl Int. 2018 Jan 30. doi: 10.1111/tri.13123. [Epub ahead of print]

Locoregional treatments before liver transplantation for hepatocellular carcinoma: A study from the European Liver Transplant Registry.

Pommergaard HC[1], Rostved AA[1], Adam R[2], Thygesen LC[3], Salizzoni M[4], Gómez Bravo MA[5], Cherqui D[2], De Simone P[6], Boudjema K[7], Mazzaferro V[8], Soubrane O[9], García-Valdecasas JC[10], Fabregat Prous J[11], Pinna AD[12], O'Grady J[13], Karam V[2], Duvoux C[14], Rasmussen A[1]; European Liver and Intestine Transplant Association (ELITA).

Studies have shown that response to locoregional treatment is an important factors for prognosis. Thus, as proposed by Mazzaferro , future selection criteria may be based on response to locoregional treatments. In other words, all patients with HCC on a waiting list for Ltx should be treated with locoregional treatments followed by a suitable observation period regardless of tumor size and number. Transplant priority should be given to patients based not only on conventional criteria, but also on the response to locoregional treatment. The results of the present paper support this notion.



Overall survival for types of locoregional treatment

INTERVENTIONAL RADIOLOGY IN HCC

AJR FOCUS ON:

AJR:209, July 2017

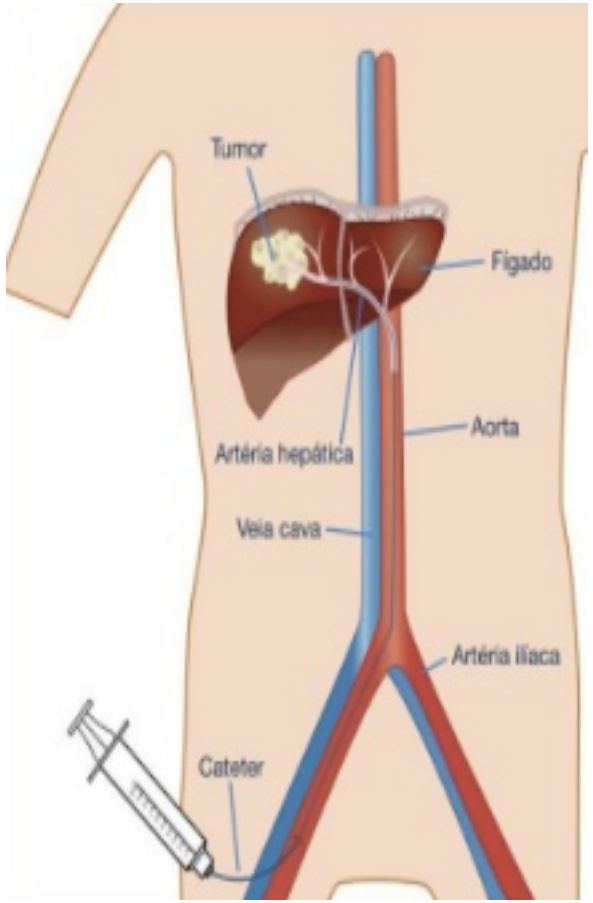
Liver-Directed Therapy for Hepatocellular Carcinoma: An Overview of Techniques, Outcomes, and Posttreatment Imaging Findings

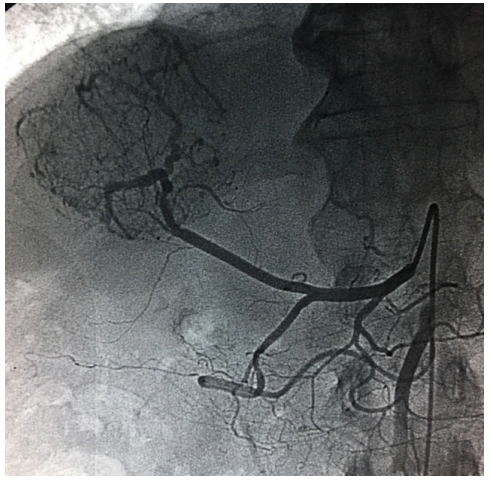
Anne M. Covey[1]
Shahid M. Hussain[2]

OBJECTIVE. The purposes of this article are to describe the indications, techniques, and results of arterially directed therapies and ablation and to review the imaging assessment of response and complications.

CONCLUSION. Most patients with hepatocellular carcinoma are not eligible for surgery, and systemic treatments are suboptimal. Therefore, locoregional therapy plays a large role in this disease. Locoregional therapies include arterially directed therapies, ablation, and radiation therapy.

Terapêuticas Intra-arteriais
TAE TACE TARE





TAE - Transarterial embolization

is defined as blockade of hepatic arterial flow with a vascular occlusive agent, such as gelatin sponge, polyvinyl alcohol, or calibrated microspheres

TACE – Transarterial chemoembolization

is defined as infusion chemotherapeutic agents and embolic material

cTACE ou DEB TACE

Contraindicações

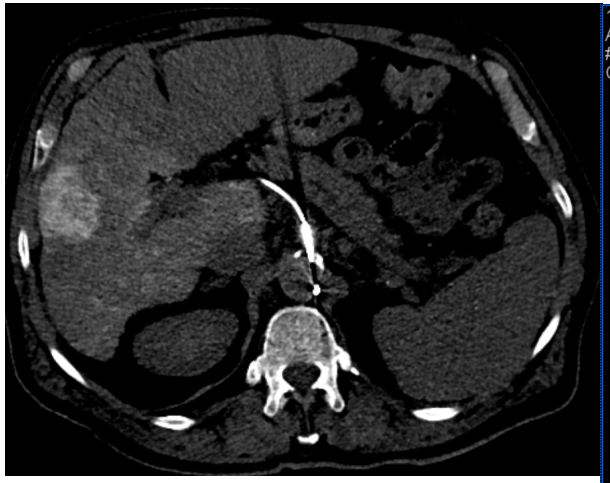
- Decompensated liver cirrhosis (Child-Pugh B, score ≥8)
- Br >2 mg/dL
- Kidney failure (creatinine ≥2 mg/ dl or creatinine clearance <30 ml/min)
- > 60% tumoral invasion in both lobes
- Extra-hepatic disease
- Severe allergic reaction to iodinated contrast medium

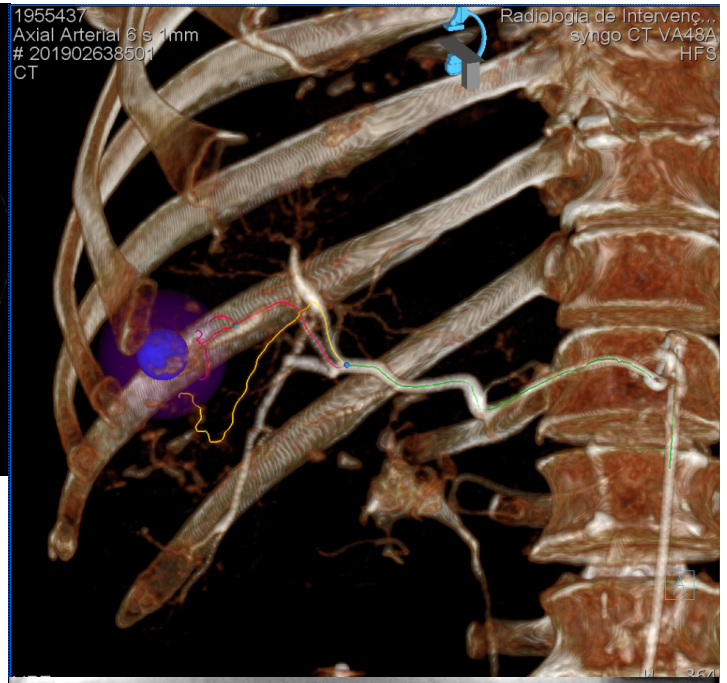
Contra-indicação Relativa:

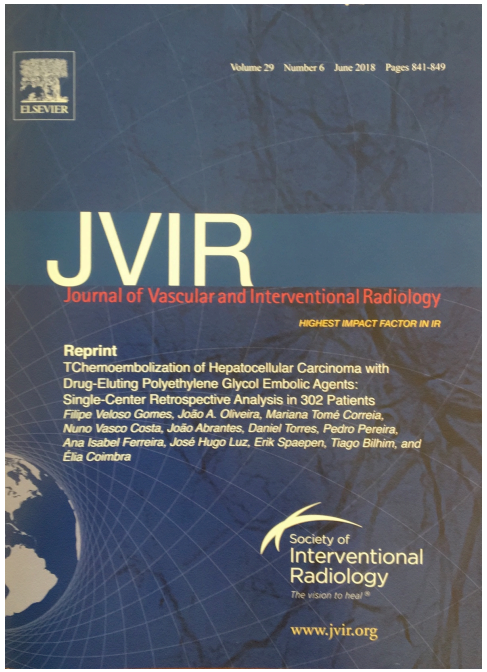
- Biliary obstruction/manipulation
- Esophageal varices at high risk of bleeding
- Severe comorbidities

Portal vein occlusion was once considered a contraindication to ADT. The current practice of TAE, TACE, and radioembolization has shown efficacy without an increase in complications in selected cases.

Quimioembolização







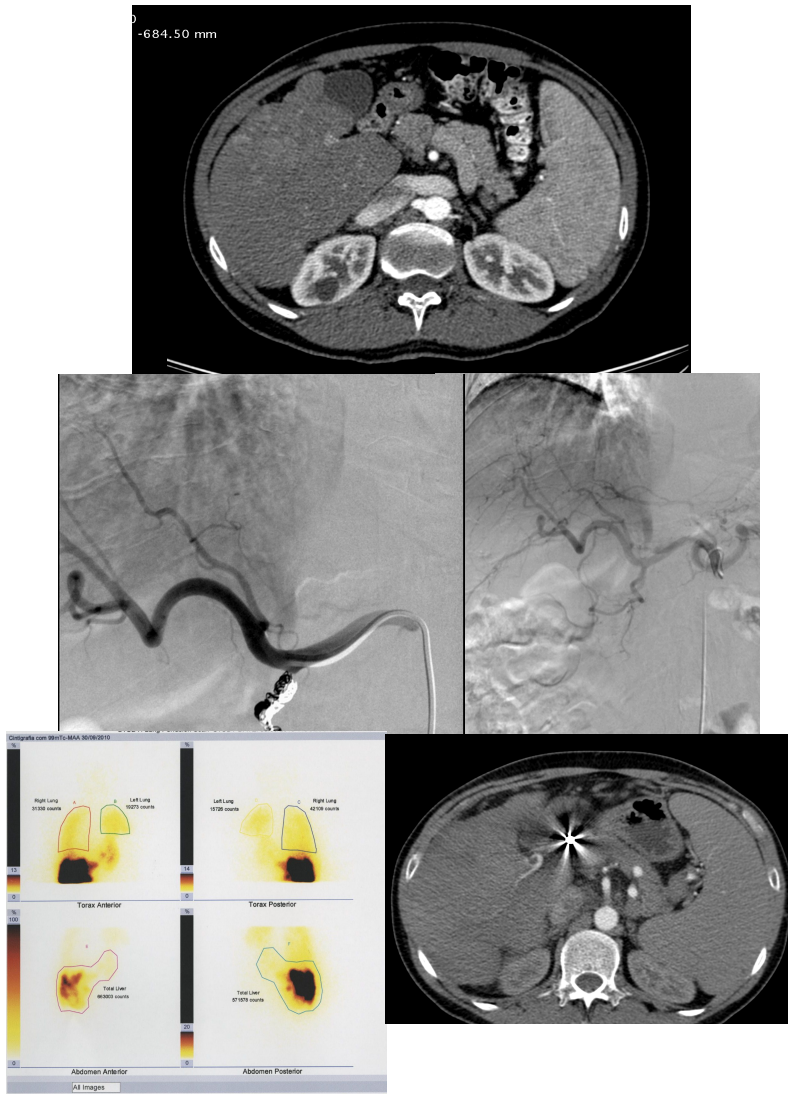
Conclusions

Chemoembolization with PEG embolic agents for HCC is safe and effective, achieving an objective response rate of 85.5%.

TARE - Radioembolization

Y90 ou Ho166

- The aim of SIRT is the delivery of a high-energy beta emitter (90Y) to the tumor bed on a glass (TheraSphere, BTG) or resin (SIR-Sphere, Sirtex) bead.
- QuiremSpheres® is based on Holmium-166 microspheres, which were developed in the clinic as an alternative to Yttrium-90 microspheres for treating unresectable liver tumors with selective internal radiation therapy (SIRT).
- these beads are not intended to embolize the target vessels.



Cochrane Library
Cochrane Database of Systematic Reviews

Yttrium-90 microsphere radioembolisation for unresectable hepatocellular carcinoma (Review)

Abdel-Rahman OM, Elsayed Z

Conclusions: There was insufficient evidence to assess the beneficial and harmful effects of yttrium-90 microsphere radioembolisation for people with unresectable hepatocellular carcinoma. Further randomised clinical trials are mandatory.

Complications of arterially directed therapies

- non target embolization
- liver failure
- vessel injury
- Post embolization syndrome. Post embolization syndrome consists of pain, fever, nausea, or a combination of these symptoms, that can last for several days.

Risk Factors for the Development of Postembolization Syndrome after Transarterial Chemoembolization for Hepatocellular Carcinoma Treatment

Fatores de Risco para o Desenvolvimento de Síndrome Pós-Quimioembolização após Quimioembolização Hepática para Tratamento de Hepatocarcinoma

Mariana LIMA✉[1], Sofia DUTRA[2], Filipe Veloso GOMES[3], Tiago BILHIM[3,4], Élia COIMBRA[3]
Acta Med Port 2018 Jan;31(1):22-29 • https://doi.org/10.20344/amp.8976

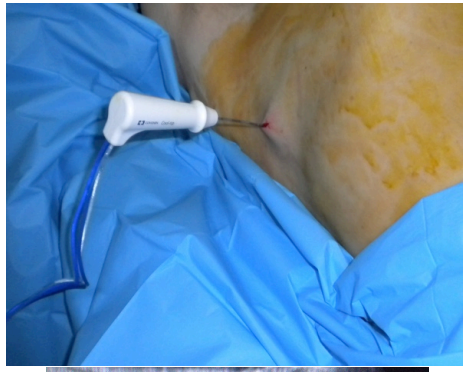
Conclusion: The dose of doxorrubicin, the size of the largest nodule treated and female gender are potential risk factors for the development of postembolization syndrome after hepatic transarterial chemoembolization for hepatocellular carcinoma.

Ablação CHC

- PEI - alcoolização
- RFA - Radiofrequência
- MWA – Microondas

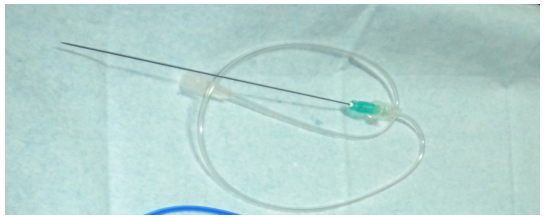
- Laser, CRIO,HIFU,IRE

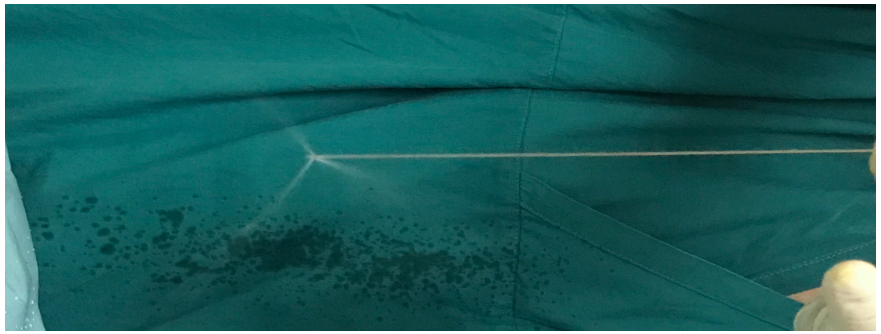
Per-cutânea



Percutaneous ethanol injection - PEI

- Absolute alcohol 95%
- fine needle (22G)
- Coagulative necrosis: cellular dehydration, protein denaturation and chemical occlusion of small tumor vessels
- Ethanol diffusion is blocked by the intratumoral fibrotic septa and/or tumor capsule
- PEI is cheap, well tolerated, simple to perform, and does not require a general anaesthetic. Severe complications are infrequent at 0–2%, including seeding
- Complete necrosis: 90% of tumors <2 cm
- Since 1983

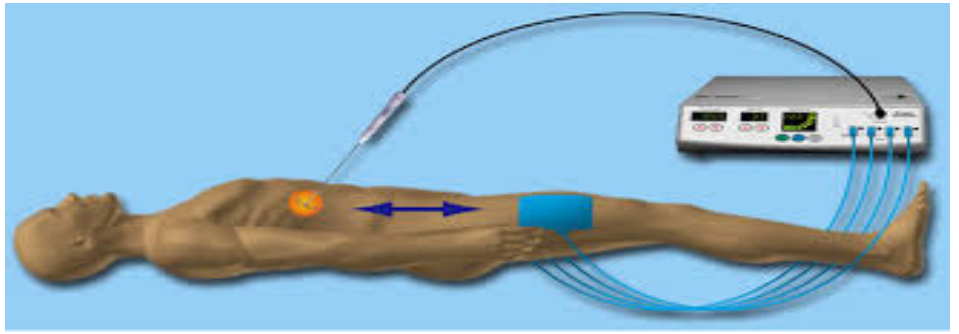




Radiofrequency ablation - RFA

- High-frequency alternating currents causing heat due to ionic agitation, resulting in coagulation necrosis

- Temperatures higher than 60 °C
- A limitation of RFA is the “heat sink” effect, which is related to the decrease in temperature from ablation in proximity to blood vessels



PEI *vs* RFA

Small Hepatocellular Carcinoma in Cirrhosis: Randomized Comparison of Radio-frequency Thermal Ablation versus Percutaneous Ethanol Iniection[1]

Radiology · July 2003

In Conclusion: Our study results show that RF thermal ablation is more effective than PEI in the treatment of small HCC in patients with cirrhosis. Therefore, RF ablation should be considered the percutaneous treatment of choice for patients who are not candidates for resection or transplantation.

Clinical outcomes of radiofrequency ablation, percutaneous alcohol and acetic acid injection for hepatocelullar carcinoma: A meta-analysis

Giacomo Germani[1], Maria Pleguezuelo[1], Kurinchi Gurusamy[2], Tim Meyer[3], Graziella Isgrò[1], Andrew Kenneth Burroughs[1,*]

Journal of Hepatology **2010** vol. 52 | 380–388

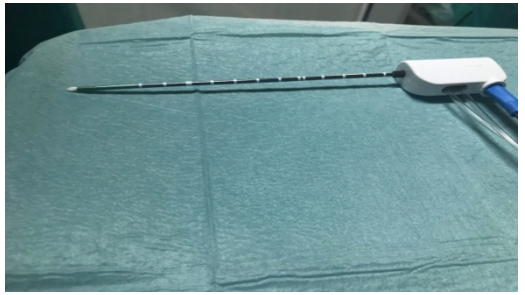
In conclusion:

RFA seems to be better than PEI in patients with HCC, especially for nodules >2 cm diameter.

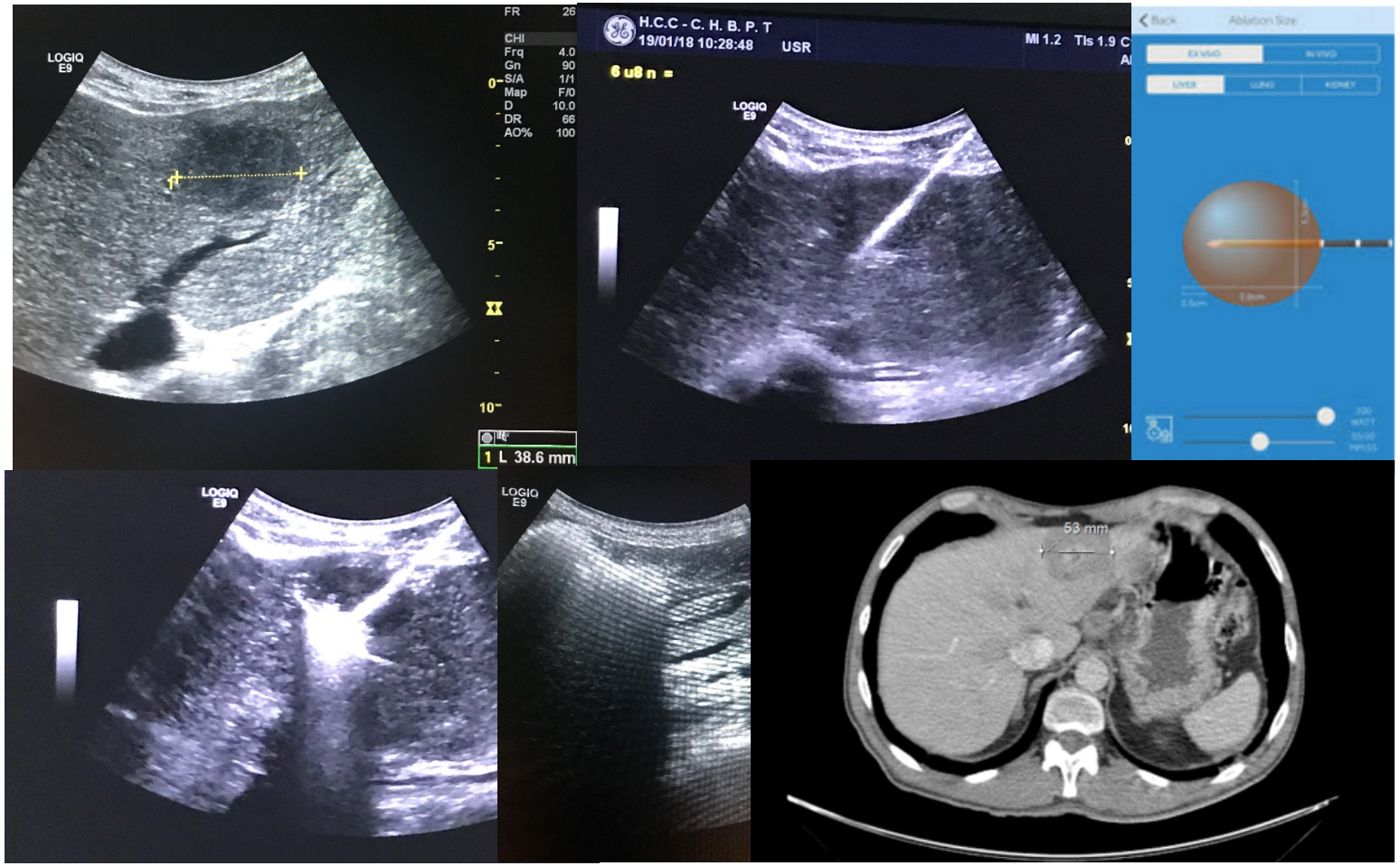
Microwave ablation - MWA

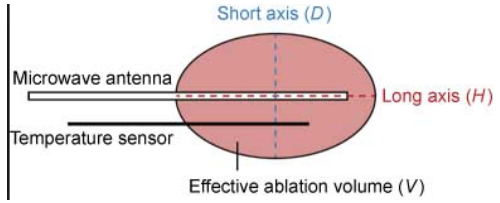
- High-frequency waves causing oscillation of H20 molecules, creating friction, tissue heating, and destruction by coagulation necrosis
- MWA energy achieves higher temperatures than RFA (up to 180 °C). MWA ablation also seems less affected by “heat sink” effect
- the short total time

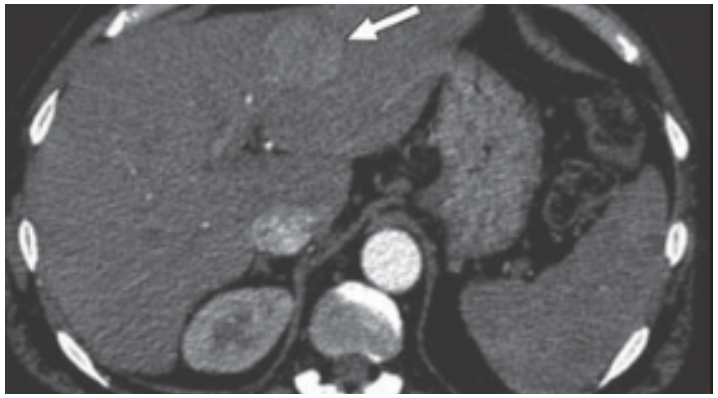
- MWA is superior to RFA in treating larger tumors

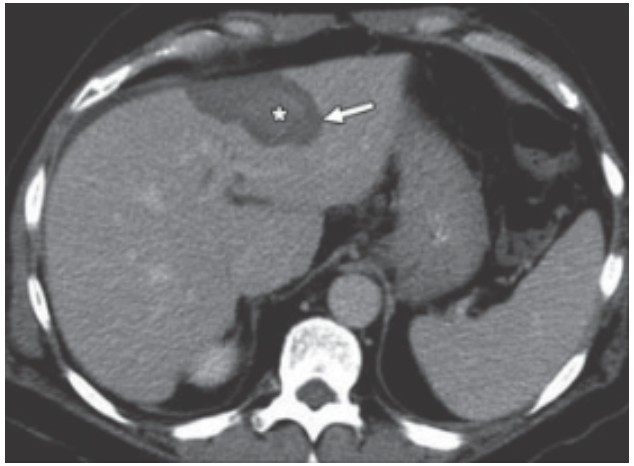


CHC Termoablação- MWA









RFA *vs* MWA

Ablation therapy of hepatocellular carcinoma: a comparative study between radiofrequency and microwave ablation

Thomas J. Vogl,[1] Parviz Farshid,[1] Nagy N. N. Naguib,[1,2] Stefan Zangos,[1] Boris Bodelle,[1] Jijo Paul,[1] Emannuel C. Mbalisike,[1] Martin Beeres,[1] Nour-Eldin A. Nour-Eldin[1,3]

Abdom Imaging (2015)

- In conclusion: RF and MW ablation therapy showed no significant difference in the treatment of HCC regarding the complete response, rates of residual foci of untreated disease, recurrence rate, and survival indices.

WJH World Journal of Hepatology

Submit a Manuscript: http://www.wjgnet.com/esps/
Help Desk: http://www.wjgnet.com/esps/helpdesk.aspx
DOI: 10.4254/wjh.v7.i8.1054

World J Hepatol 2015 May 18; 7(8): 1054-1063
ISSN 1948-5182 (online)

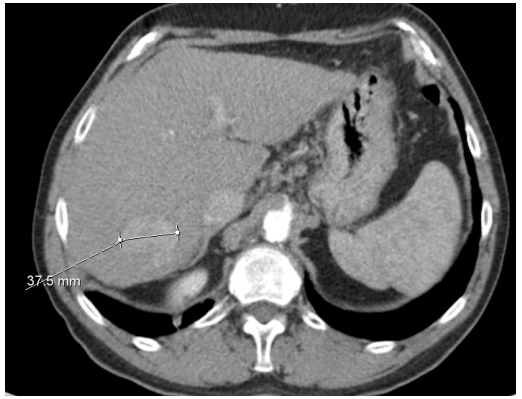
REVIEW

Percutaneous microwave ablation *vs* radiofrequency ablation in the treatment of hepatocellular carcinoma

- MWA having a more advantageous profile in terms of ablation volume, procedural time and simultaneous treatment of multiple lesions. However, with respect to clinical end-points, there is no solid proof as yet to support the advantage of one over the other.

Ablação

1. O número de lesões a tratar, normalmente ≤ 3 tumores
2. A dimensão do tumor: até 3 cm para RFA / ≤ até 4 cm para MWA (margem 5mm)
3. A localização do tumor: proximidade com os grandes vasos, os ductos biliares, muito periférico

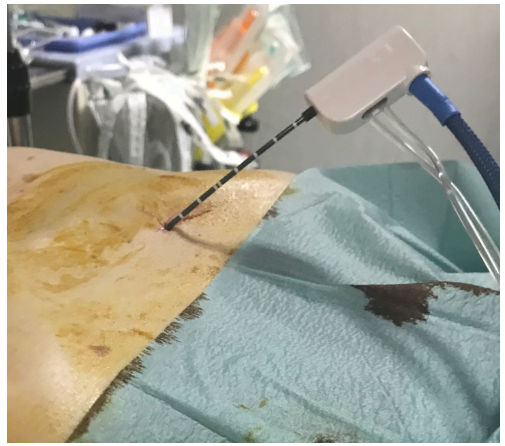


	Alcoolização	RF	MW
Dimensão	< 1,5cm	Até 3cm	Até 4cm
Localização	Não depende	Depende CI: Junto a G Vasos; Vesícula biliar; Sub-capsulares; Estruturas digestivas	Depende CI: Estruturas digestivas; ductos biliares ectasiados
Anestesia	Sem sedação	Sedação	Sedação

Cardiovasc Intervent Radiol (2010) 33:11–17
DOI 10.1007/s00270-009-9736-y

CIRSE GUIDELINES

Quality Improvement Guidelines for Radiofrequency Ablation of Liver Tumours



Contraindications

Contraindications for RFA are as follows:

1. tumour located <1 cm from the main biliary duct (due to risk of delayed stenosis of the main biliary tract);
2. intrahepatic bile duct dilation;
3. anterior exophytic location of the tumour (due to the risk of tumour seeding);
4. bilioenteric anastomosis; and
5. untreatable/unmanageable coagulopathy.

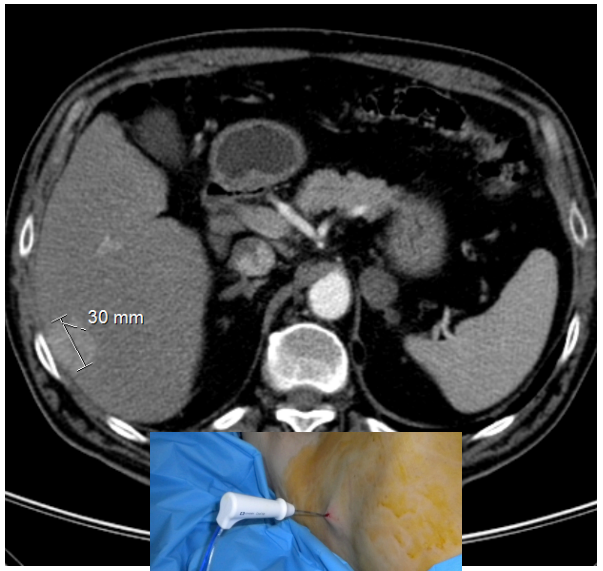
Ascite
Manipulação biliar prévia
Alterações da coagulação

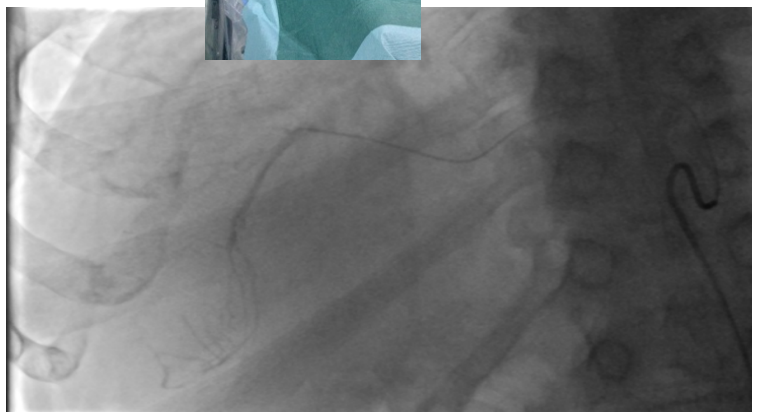
Termoablação - complicações

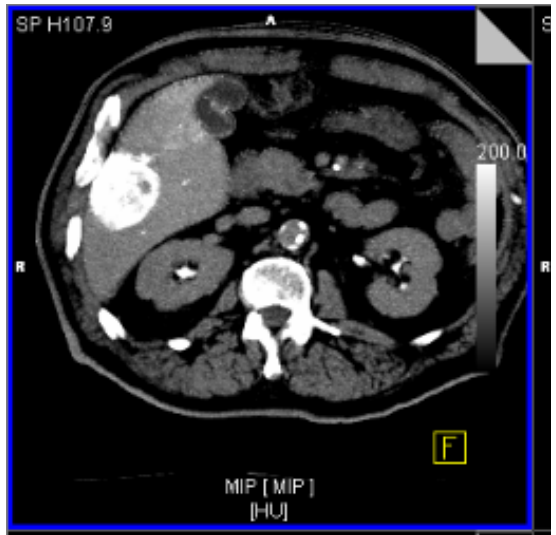
- Imediatas: mais comum é o derrame pleural e a hemorrgia
- Tardias: raras (≤ 2.4%) abcesso, biloma, fistula biliar, estenose canal biliar, fistula arterio-venosa, hernia diafragmática, perfuração gástrica ou do colon

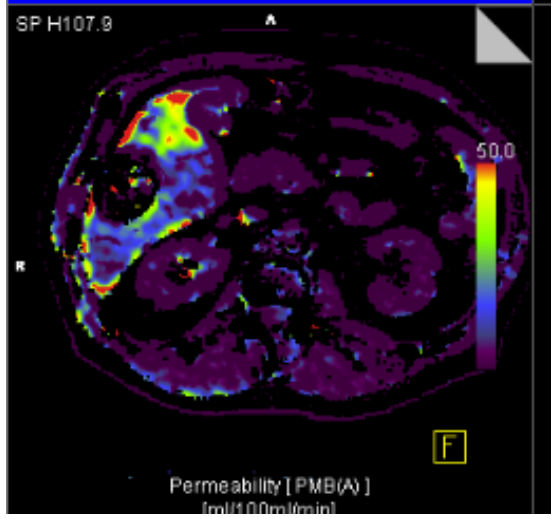
Mortalidade peri procedimento baixa < 0.01%,

Dimensão / localização

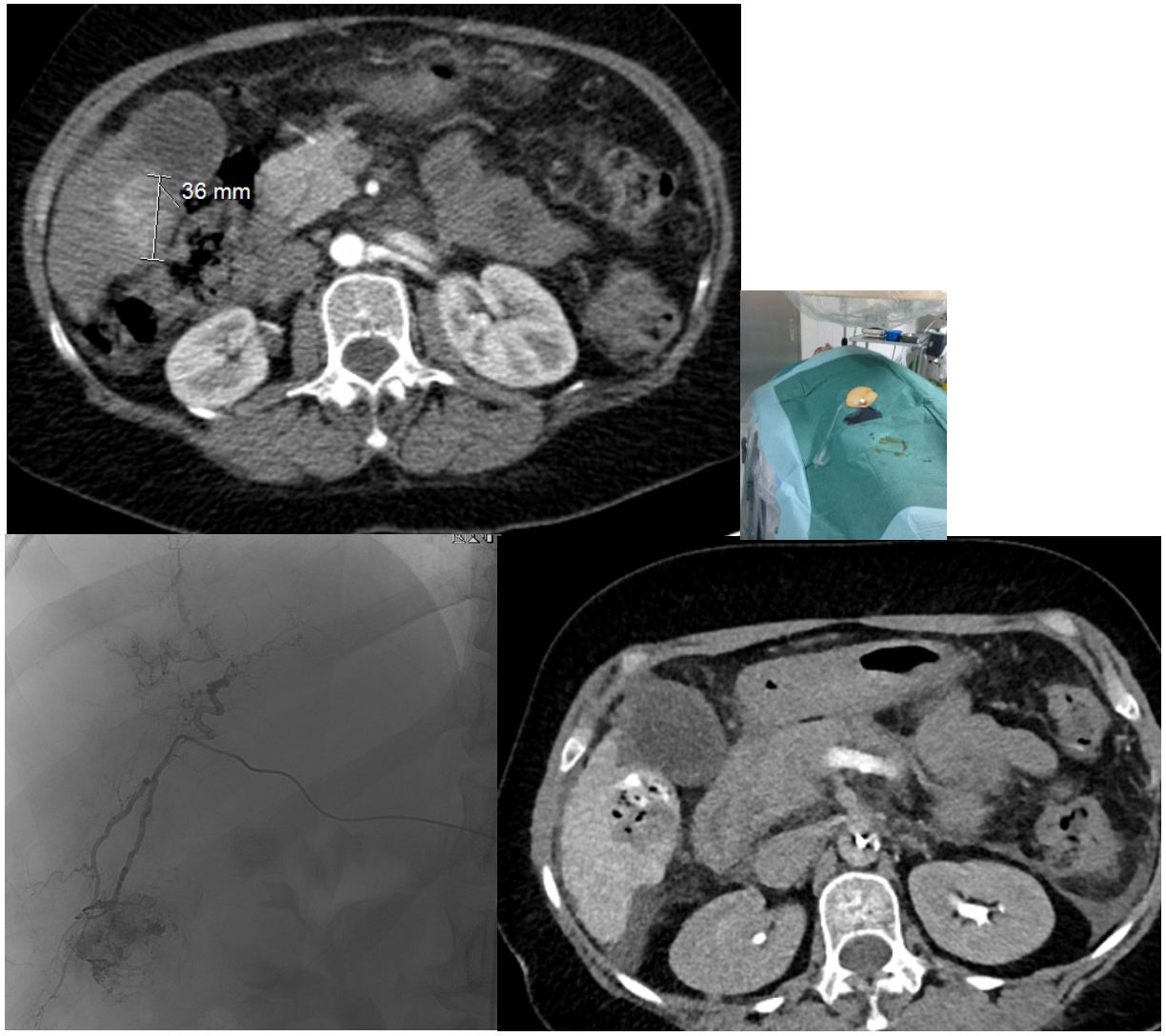


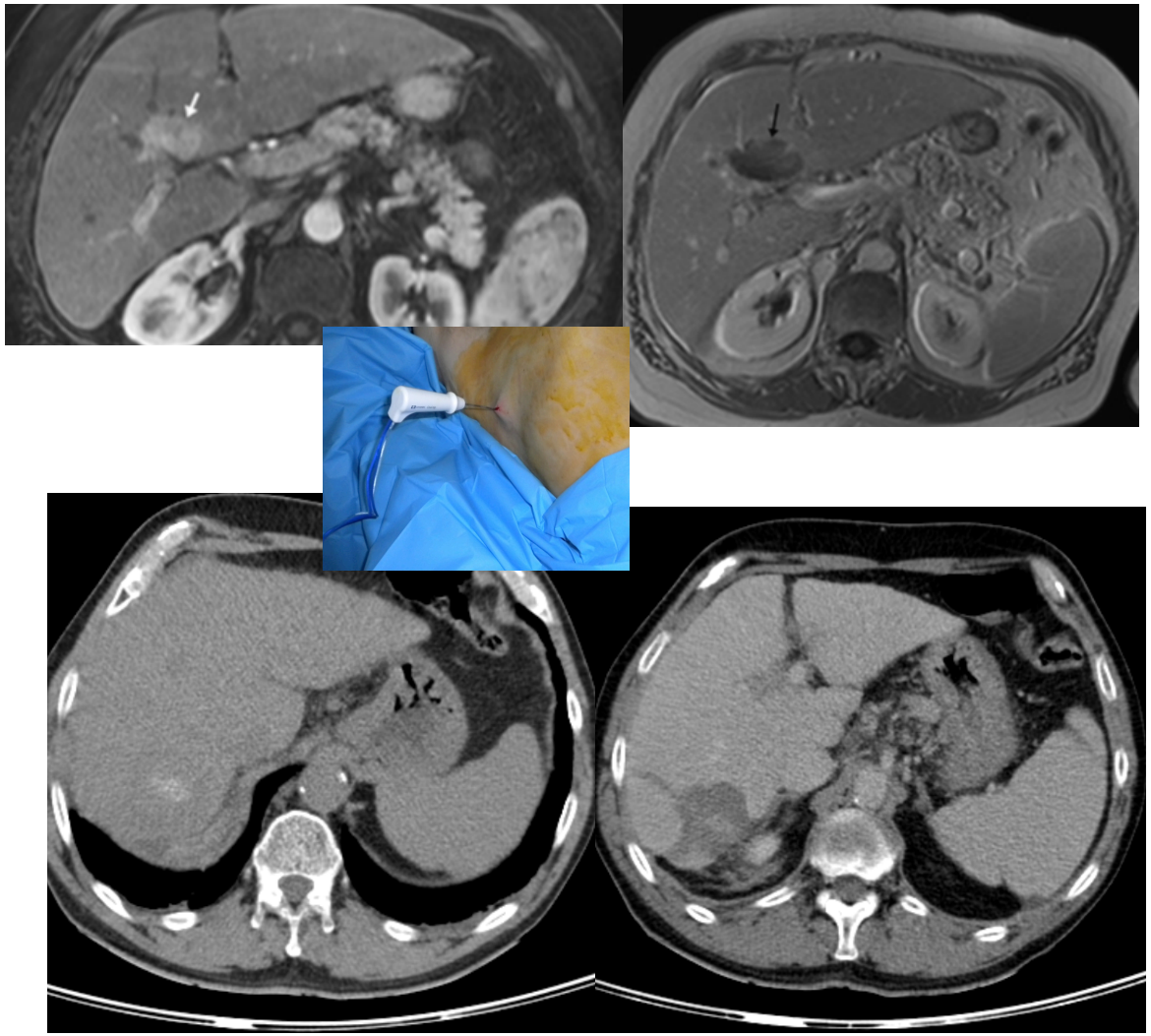






Localização vs dimensão





Conclusão

Terapêuticas loco-regionais

- Importante arma no tratamento do carcinoma hepoatocelular
- Diferentes opções
- Variar ou combinar as terapêuticas segundo o caso e a sua evolução

- Sempre em contexto multidisciplinar
- Sempre em centros de referência
- Disponibilidade de todas as opções: RI; CIRURGIA; HEPATOLOGIA;ONCOLOGIA